



IPW

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Kei HIRUMA et al.

Group Art Unit: 2871

Application No.: 10/626,565

Examiner: H. Nguyen

Filed: July 25, 2003

Docket No.: 116695

For: LIQUID DROP DISCHARGE METHOD, LIQUID DROP DISCHARGE APPARATUS, PRODUCTION METHOD OF LIQUID CRYSTAL APPARATUS, LIQUID CRYSTAL APPARATUS, AND ELECTRONIC EQUIPMENT

REQUEST FOR RECONSIDERATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the December 14, 2004 Office Action, reconsideration is respectfully requested in light of the following remarks.

Claims 1-11 are pending. Reconsideration in view of the following remarks is respectfully requested.

I. The Specification Satisfies All Formal Requirements

The disclosure is objected to for informalities. Specifically, the Examiner asserts that the specification does not disclose the liquid crystal used for cleaning on the first substrate, as claimed in claim 3. Applicants respectfully disagree. For example, at least at page 3, lines 10-15 of the specification, it is disclosed that the manufacturing method has the steps of cleaning the nozzle using the liquid crystal. Withdrawal of the objection to the disclosure is respectfully requested.

II. Claim 7 Satisfies All Formal Requirements

Claim 7 is objected to for informalities. Specifically, the Examiner questions how the oriented film constitutes a liquid crystal device or a protection film and how can the liquid material (not liquid crystal) form the oriented film. The Examiner's attention is directed to at least page 5 of the specification that discloses the liquid crystal device has at least one component of a component group consisting of a liquid crystal layer and oriented film, and a protection film for a color filter where the droplet discharge apparatus is used to form at least one component of the component group. Withdrawal of the objection to claim 7 is respectfully requested.

III. The Claims Define Patentable Subject Matter

Claims 8-11 are rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,511,591 A to Abe; and claims 1-7 are rejected under 35 U.S.C. §103(a) as unpatentable over Abe in view of EP 99 41 80 A1 to Mondine et al. These rejections are respectfully traversed.

None of the applied art teaches, discloses or suggests cleaning the nozzle using the liquid material and arranging at least a part of the liquid material used for cleaning on the substrate, and claimed in claim 1 and similarly claimed in claims 3 and 6.

The Examiner asserts that the feature of cleaning the nozzle is performed by substitution of capillary 63 as disclosed in column 6, lines 29-30 of Abe. However, Abe merely discloses a structure for substitution of capillary 63. The capillary 63 is substituted by removing capillary unit 6 from the baseboard 7 and fitting another capillary unit. Abe merely discloses using a liquid crystal dispenser to release drop by drop and to control the quantity of one drop, which is performed by controlling the number of drops. There is no teaching, disclosure or suggestion in Abe for cleaning the nozzle using the liquid material and arranging at least a part of the liquid material used for cleaning on the substrate, as discussed

above. Nor does the Examiner particularly assert that Abe specifically discloses such a feature.

Mondine does not make up for the deficiencies of Abe discussed above. Specifically, Mondine et al. is directed to an all purpose detergent that is environmentally friendly using a liquid-crystal cleaning composition. The detergent of Mondine's is primarily for home-use. The detergent of Mondine's therefore, cannot be used for the cleaning step of the present invention in which a liquid material is used for cleaning the nozzle and a part of the liquid material used for the cleaning is arranged on the substrate.

In addition, the field of the application of Mondine is different from that of Abe. Unlike Mondine, Abe is directed to fabrication of a liquid crystal display. Accordingly, the combination of Abe and Mondine would not have been obvious to one of ordinary skill in the art. In fact, Applicants respectfully submit that only the present application suggests the claimed combination of features. As such, the asserted combination of Abe and Mondine was made using improper hindsight reconstruction of the references.

With respect to the rejection of claims 8-11, the Examiner asserts that Abe discloses a liquid material supply system which supplies the liquid material to a nozzle and a measuring device which measures a quantity of the liquid material arranged on the substrate, as claimed in claim 8. Applicants respectfully disagree.

Abe merely discloses that the liquid crystal dispenser releases liquid crystal drop by drop and controls the quantity of one drop. That is, Abe merely discloses controlling the liquid crystal dispenser 10 to control the quantity of one drop in the order of milligrams. However, Abe does not disclose a measuring device which measures a quantity of the liquid material arranged on the substrate. Abe merely discloses the drop amount but does not disclose measuring a liquid material that is arranged on the substrate.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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JAO:KMM/scg

Date: March 11, 2005

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